

C/O. SUSAN HANLEY

Access DB# 88908

SEARCH REQUEST FORM

Scientific and Technical Information Center

C/O Jan Delaval

Requester's Full Name: Maury Audet Examiner #: 79808

Date: 3/19/03

Art Unit: 1654

Phone Number: 305-5039

Serial Number: 09/876,304

Mail Box and Bldg/Room Location: ~~11D13~~ 11D04

Results Format Preferred: PAPER

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention:

Point of Contact:

Inventors (please provide full names):

Susan Hanley
Technical Info. Specialist
CM1 6B05 Tel: 305-4053

Earliest Priority Filing Date:

4/29/98

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search: 1) Please search the 8 compounds of
CL. 23 (and 45 - SAME).

2) ~~find~~ in a composition w/ other compounds/
molecules

3) If time, please search CL. 23 compounds
in combination (1 or >), as per CL. 21
(But if indiv. compounds are found alone or in
combin., assume 'mixtures' aren't out there).

TX - MAURY LI

STAFF USE ONLY

Searcher: Hanley

Searcher Phone #:

Searcher Location:

Date Searcher Picked Up: 3/13

Date Completed: 3/19

Searcher Prep & Review Time:

Clerical Prep Time:

Online Time:

PTO-1590 (8-01)

Type of Search

NA Sequence (#)

AA Sequence (#)

Structure (#)

Bibliographic

Litigation

Fulltext

Patent Family

Other

Vendors and cost where applicable

STN

Dialog

Questel/Orbit

Dr. Link

Lexis/Nexis

Sequence Systems

WWW/Internet

Other (specify)

=> d his

(FILE 'HOME' ENTERED AT 11:34:49 ON 19 MAR 2003)

FILE 'HCAPLUS' ENTERED AT 11:35:03 ON 19 MAR 2003

L1 311 S WARNER I?/AU
 L2 27 S BILLIOT E?/AU
 L3 88 S SHAMSI S?/AU
 E THIBODE/AU
 L4 10 S E96-98
 L5 359 S L1-4
 L6 70 S L5 AND MICELL?
 L7 1 S L6 AND OLIGOPEPTID? ← *lcite for inventors*
 SELECT RN L7 1

FILE 'REGISTRY' ENTERED AT 11:36:55 ON 19 MAR 2003

L8 10 S E109-118 *10 cpds in L7 cite ✓*
 L9 8 S L8 NOT RSD/FA *8 cpds w/ no rings - (claim 23 cpds (polymers))*
 L10 2 S " D-LEUCINE, N-(1-OXO-10-UNDECENYL)-D-LEUCYL-"

FILE 'HCAPLUS' ENTERED AT 11:39:17 ON 19 MAR 2003

L11 1 S L7 AND L8 *lcite inventor search, 10 cpds displayed*
 FILE 'REGISTRY' ENTERED AT 11:41:32 ON 19 MAR 2003

FILE 'HCAPLUS' ENTERED AT 11:41:36 ON 19 MAR 2003

L12 10 S L9 *10 cites total for claim 23 compounds (polymers) ✓ out*
 FILE 'REGISTRY' ENTERED AT 11:42:52 ON 19 MAR 2003

L13 1 S 204689-87-2
 L14 1 S 204689-88-3
 L15 1 S 204689-89-4
 L16 1 S 243843-87-0
 L17 1 S 352711-87-6
 L18 1 S 352711-89-8
 L19 1 S 352711-91-2
 L20 1 S 192448-34-3

claim 45 cpds (non-polymers) (8) 1 each; ✓ out who to

FILE 'HCAPLUS' ENTERED AT 11:51:54 ON 19 MAR 2003

L21 6 S L13-20
 L22 9 S L12 NOT L11 *9 cites for claim 23 (polymers) (subtracted out inventor)*
 L23 6 S L21 NOT L11 *6 cites for claim 45 cpds ✓*
 FILE 'CAOLD' ENTERED AT 11:54:30 ON 19 MAR 2003
 L24 0 S L13-20
 L25 0 S L9 *> no hits in ca old*

=> d ibib abs hitstr ind

L11 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: (2001) 576060 HCAPLUS

DOCUMENT NUMBER: 135:153248

TITLE: Polymerized oligopeptide-surfactant chiral micelles

INVENTOR(S): Warner, Isiah M.; Billiot, Eugene J.
; Shamsi, Shahab A.; Thibodeaux, Stefan J.

PATENT ASSIGNEE(S): Board of Supervisors of Louisiana State University and Agricultural and Mechanical College, USA

SOURCE: U.S., 22 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6270640	B1	20010807	US 1999-296351	19990422
US 2001051703	A1	20011213	US 2001-876304	20010607
PRIORITY APPLN. INFO.:			US 1998-126431P	P 19980429
			US 1999-296351	A3 19990422

AB Chiral sepn. can be enhanced through the use of polymd. dipeptide-surfactant or oligopeptide-surfactant chiral micelles. Because polymd. micelles eliminate much of the complex dynamic behavior assocd. with conventional micelles, polymd. chiral micelles have stronger chiral recognition properties than do otherwise-identical, "conventional" or non-polymd. chiral micelles. Recovery of chiral ligands from polymd. chiral micelles is often easier, as the chiral ligands may typically be recovered by simple extn. with an appropriate org. solvent. By contrast, recovering the solute from a conventional, non-polymd. micellar medium by extn. with an org. solvent frequently results in the formation of troublesome emulsion systems. Polymd. chiral micelle systems are therefore beneficial in both preparative-scale and process-scale sepn. Polymd. chiral micelles have no crit. micelle concn., allowing lower concns. to be used in micellar electrokinetic capillary chromatog., which in turn reduces the otherwise deleterious heat that can be generated. Many polymd. dipeptide-surfactant or oligopeptide-surfactant chiral micelles have superior sepn. properties as compared to polymd. amino acid-surfactant chiral micelles. Poly(sodium N-undecylenyl-L-valine-L-valine) was used in electrokinetic chromatog.

IT 192448-35-4P 204689-90-7P 204689-91-8P
204689-92-9P 243843-88-1P 352711-88-7P
352711-90-1P 352711-92-3P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polymd. oligopeptide-surfactant chiral micelles)

RN 192448-35-4 HCAPLUS

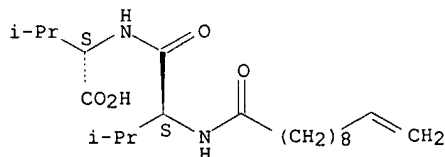
CN L-Valine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt, homopolymèr (9CI) (CA INDEX NAME)

CM 1

CRN 192448-34-3

CMF C21 H38 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

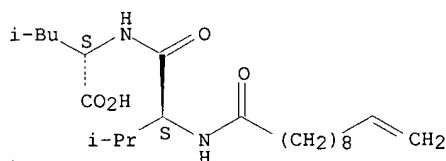
RN 204689-90-7 HCAPLUS
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt, homopolymer
(9CI) (CA INDEX NAME)

CM 1

CRN 204689-87-2

CMF C22 H40 N2 O4 . Na

/ Absolute stereochemistry.



● Na

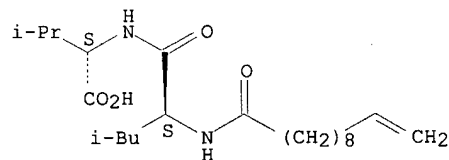
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RN  204689-91-8  HCAPLUS
CN  L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer
    (9CI)  (CA INDEX NAME)
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CM 1

CRN 204689-88-3

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

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RN  204689-92-9  HCAPLUS
CN  L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer
    (9CI)  (CA INDEX NAME)

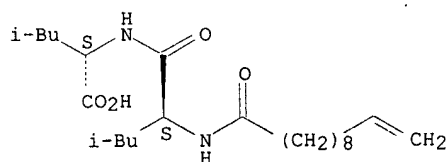
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CM 1

CRN 204689-89-4

CMF C23 H42 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

RN 243843-88-1 HCAPLUS
CN D-Leucine, N-(1-oxo-10-undecenyl)-D-leucyl-, monosodium salt, homopolymer

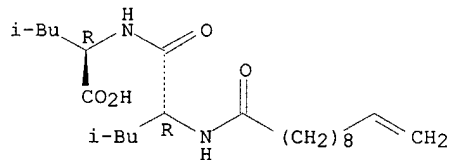
(9CI) (CA INDEX NAME)

CM 1

CRN 243843-87-0

CMF C23 H42 N2 O4 . Na

Absolute stereochemistry.



● Na

RN 352711-88-7 HCAPLUS

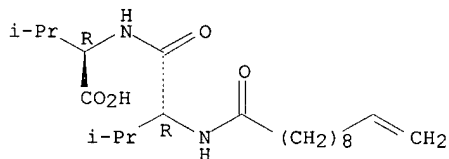
CN D-Valine, N-(1-oxo-10-undecenyl)-D-valyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 352711-87-6

CMF C21 H38 N2 O4 . Na

Absolute stereochemistry.



● Na

RN 352711-90-1 HCAPLUS

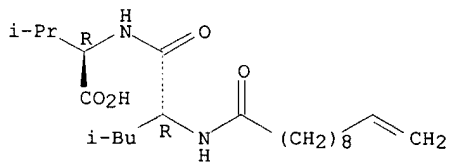
CN D-Valine, N-(1-oxo-10-undecenyl)-D-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 352711-89-8

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

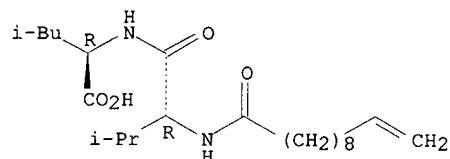
RN 352711-92-3 HCAPLUS

CN D-Leucine, N-(1-oxo-10-undecenyl)-D-valyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

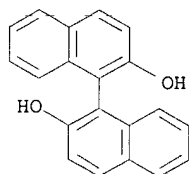
CRN 352711-91-2
CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.

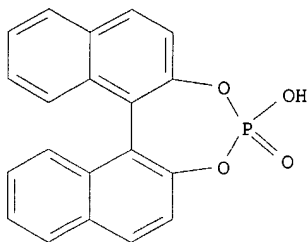


● Na

IT 602-09-5, (.-.)1,1'-Bi-2-naphthol 35193-63-6
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(polymd. **oligopeptide**-surfactant chiral **micelles**)
RN 602-09-5 HCAPLUS
CN [1,1'-Binaphthalene]-2,2'-diol (8CI, 9CI) (CA INDEX NAME)



RN 35193-63-6 HCAPLUS
CN Dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin, 4-hydroxy-, 4-oxide (9CI)
(CA INDEX NAME)



IC ICM G01N027-26
ICS B01D011-00; B01D011-04; B01D005-08
NCL 204451000
CC 35-4 (Chemistry of Synthetic High Polymers)
ST polymd **oligopeptide** surfactant chiral **micelle**
enantiomer sepn
IT Capillary electrophoresis
Liquid chromatography
(polymd. **oligopeptide**-surfactant chiral **micelles**)
IT 192448-35-4P 204689-90-7P 204689-91-8P
204689-92-9P 243843-88-1P 352711-88-7P
352711-90-1P 352711-92-3P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(polymd. **oligopeptide**-surfactant chiral **micelles**)
IT 602-09-5, (.-.)1,1'-Bi-2-naphthol 35193-63-6
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(polymd. **oligopeptide**-surfactant chiral **micelles**)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

AUDET 09/876,304

=> d ibib abs hitstr 1

L22 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003 1626 HCAPLUS

TITLE: Polysodium N-Undecanoyl-L-leucylvalinate: A Versatile Chiral Selector for Micellar Electrokinetic Chromatography

AUTHOR(S): Shamsi, Shahab A.; Valle, Bertha C.; Billiot, Fereshteh; Warner, Isiah M.

CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA

SOURCE: Analytical Chemistry (2003), 75(3), 379-387
CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Dipeptide micelle polymers are a new class of polymeric surfactants of which the polysodium undecanoyl-L-leucylvalinate (poly-L-SULV) is a broadly applicable chiral selector for micellar electrokinetic chromatog. This neg. charged dipeptide micelle polymer is a high mol. wt. compd. with large countercurrent mobility, zero crit. micelle concn., low aggregation no., and high soly. in water or water-org. solvents. In an extensive chiral screening program, enantiosepn. of 75 racemic compds. was tested with poly-L-SULV as chiral pseudostationary phase in neutral pH and basic pH background electrolytes. A total of 58 out of 75 racemic compds. could be resolved after choosing an appropriate concn. of poly-L-SULV. Although anionic chiral analytes are difficult to resolve using poly-L-SULV, the percent success rate for chiral resoln. of cationic (77%) and neutral (85%) racemates was very high. Aspects regarding electrostatic, steric, hydrophobic, and hydrogen-bonding interactions of this dipeptide micelle polymer with various classes of chiral analytes are discussed.

IT 204689-91-8P

RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified);
SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation);
USES (Uses)

(poly(sodium undecanoylleucylvalinate) as versatile chiral selector for micellar electrokinetic chromatog.)

RN 204689-91-8 HCAPLUS

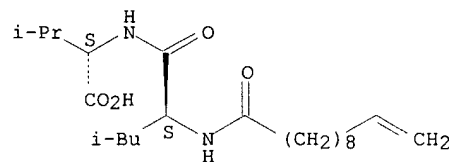
CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer
(9CI) (CA INDEX NAME)

CM 1

CRN 204689-88-3

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

REFERENCE COUNT:

28

THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 2

L22 ANSWER (2) OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: (2002)154624 HCAPLUS

DOCUMENT NUMBER: 137:118753

TITLE: Depth of penetration of binaphthyl derivatives into the micellar core of sodium undecenoyl leucyl-leucinate surfactants

AUTHOR(S): Haddadian Billiot, Feresteh; Billiot, Eugene J.; Warner, Isiah M.

CORPORATE SOURCE: Department of Physical and Life Science, Texas A&M University-Corpus Christi, Corpus Christi, TX, 78412, USA

SOURCE: Journal of Chromatography, A (2002), 950(1-2), 233-239
CODEN: JCRAEY; ISSN: 0021-9673

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two different diastereomeric forms of sodium N-undecanoyl leucyl-leucinate (SULL) (both L,L and L,D) were used to examine the role of depth of penetration of chiral analytes into the micellar core of polymeric and monomeric surfactants on enantioselectivity. Chiral sepn. of three binaphthyl derivs., i.e. (.+-.)-1,1'-bi-naphthyl-2,2'-diamine (BNA), (.+-.)-1,1'-bi-2-naphthol (BOH), and (.+-.)-1,1'-binaphthyl-2,2'-dihydrogen phosphate (BNP), were studied. Chromatog. results suggest that BNP interacts approx. the same with both the C- and N-terminal amino acid of poly SULL, while the preferential site of interaction of this analyte with the monomeric form of SULL (mono SULL) is at the C-terminal amino acid. This indicates that BNP enantiomers penetrate deeper into the micellar core of the poly SULL than that of the mono SULL. Varying the temp. resulted in a change in the depth of penetration of BNP into the micellar core of the poly SULL. However, the enantiomers of BNA and BOH always interact preferentially with the N-terminal amino acid of SULL surfactants (both polymer and monomer), independent of the temps. studied.

IT 204689-92-9

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(depth of penetration of binaphthyl derivs. into the micellar core of sodium undecenoyl leucyl-leucinate surfactants)

RN 204689-92-9 HCAPLUS

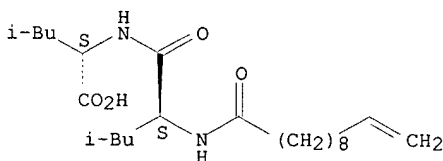
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-89-4

CMF C23 H42 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

REFERENCE COUNT:

16

THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 3

L22 ANSWER (3) OF 9 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2000358839 HCAPLUS
 DOCUMENT NUMBER: 133.106601

New 8

TITLE: Chiral separation with dipeptide-terminated polymeric surfactants: the effect of an extra heteroatom on the polar head group
 AUTHOR(S): Haynes, Judson L., III; Billiot, Eugene J.; Yarabe, Hyacinthe H.; Warner, Isiah M.; Shamsi, Shahab A.
 CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA
 SOURCE: Electrophoresis (2000), 21(8), 1597-1605
 CODEN: ELCTDN; ISSN: 0173-0835
 PUBLISHER: Wiley-VCH Verlag GmbH
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Chiral recognition of two binaphthyl derivs. and three benzodiazepines was studied using polymeric surfactants in electrokinetic chromatog. The four specific dipeptide terminated (multichiral) micelle polymers were prepd. These include poly(sodium-N-undecanoyl-L-alanyl leucinate) (poly L-SUAL), poly(sodium-N-undecanoyl-L-valyl leucinate) (poly L-SUVL), poly(sodium-N-undecanoyl-L-seryl leucinate) (poly L-SUSL), and poly(sodium-N-undecanoyl-L-threonyl leucinate) (poly L-SUTL). The physicochem. properties (crit. micelle concn. and sp. rotation) of the polymers were studied and the mol. wt. of dipeptide-terminated micelle polymers were detd. using anal. ultracentrifugation. The dipeptide-terminated micelle polymers were designed to study the effect of the extra heteroatom at the polar head group of the micelle polymer (i.e., poly L-SUSL compared to poly L-SUAL and poly L-SUTL compared to poly L-SUVL) on the enantiomeric sepn. of binaphthyl derivs. and benzodiazepines. The synergistic effect of three chiral centers in (poly L-SUTL) provided improved resolu. over that of two chiral centered dipeptide-terminated micelle polymer in the case of (+-)-temazepam, (+-)-oxazepam, (+-)-binaphthol, and (+-)-binaphthol phosphate. The chiral recognition mechanisms in these cases were addnl. controlled by the presence of the extra heteroatom located on the polar head group of the micelle polymers.

IT 204689-90-7P

RL: ARG (Analytical reagent use); PNU (Preparation, unclassified); PRP (Properties); ANST (Analytical study); PREP (Preparation); USES (Uses) (prepn. and crit. micelle concn. and sp. rotation of dipeptide-terminated polymer surfactants and performance in chiral sepn.)

RN 204689-90-7 HCAPLUS

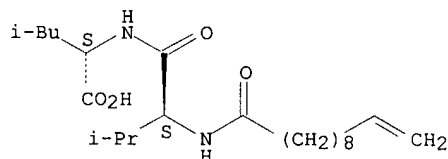
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-87-2

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

REFERENCE COUNT:

23

THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 4

L22 ANSWER(4) OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: (2000) 83984 HCAPLUS

DOCUMENT NUMBER: 132:293993

TITLE: NMR study of the interaction of monomeric and polymeric chiral surfactants with (R)- and (S)-1,1'-binaphthyl-2,2'-diyl hydrogen phosphate

AUTHOR(S): Rugutt, Joseph K.; Billiot, Eugene; Warner, Isiah M.

CORPORATE SOURCE: Department of Chemistry, Massachusetts College of Liberal Arts, North Adams, MA, 01247-4100, USA

SOURCE: Langmuir (2000), 16(7), 3022-3029
CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chiral discrimination of enantiomers of 1,1'-binaphthyl-2,2'-diyl hydrogen phosphate (BNDHP) by monomeric chiral surfactants (CS), sodium N-undecylenyl-L-valine-L-leucine and sodium N-undecylenyl-L-leucine-L-valine, and related polymers is investigated by high-field one (1D)- and two-dimensional (2D) NMR spectroscopy. A general property of the high-resoln. 1H NMR spectra of monomeric CS in 90% H2O/10% D2O is the appearance of downfield well-resolved chem. shift signals corresponding to the alpha (.alpha.H) protons of valine (Val.alpha.H) and leucine (Leu.alpha.H) amino acid residues. The remaining skeletal protons resonate in the region 0.5-2.5 ppm, giving rise to an envelope of poorly resolved chem. shifts. The 1H NMR signals of (R)- and (S)-BNDHP were enantiomerically sepd. into six sets of peaks in the presence of CS. The conformational anal. by means of nuclear Overhauser effect spectroscopy expts. indicates that the CS mols. adopt folded conformations in aq. soln. The multiple interactions of (S)-BNDHP and CS obtained from intermol. rotating frame Overhauser effect NMR spectroscopy is direct evidence on the mechanism of chiral recognition in aq. media.

IT 204689-90-7P 204689-91-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(NMR study of chiral recognition between binaphthyldiyl hydrogen phosphate and chiral surfactants)

RN 204689-90-7 HCAPLUS

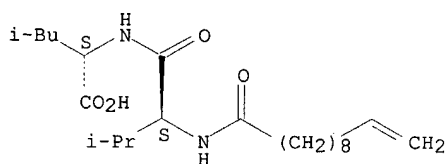
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-87-2

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

RN 204689-91-8 HCAPLUS

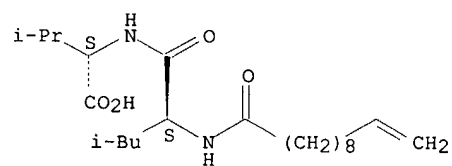
CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-88-3

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

REFERENCE COUNT:

43

THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 5

L22 ANSWER (5) OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999-641302 HCAPLUS

DOCUMENT NUMBER: 1311345909

TITLE: Chiral separations using polymeric dipeptide surfactants: effect of number of chiral centers and steric factors

AUTHOR(S): Haddadian, F.; Billiot, E. J.; Shamsi, S. A.; Warner, I. M.

CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, USA

SOURCE: Journal of Chromatography, A (1999), 858(2), 219-227
CODEN: JCRAEY; ISSN: 0021-9673

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two polymeric dipeptide chiral surfactants (PDCSs), poly sodium N-undecanoyl isoleucyl-valinate (SUILV) with three chiral centers and poly sodium N-undecanoyl leucyl-valinate (SULV) with two chiral centers, were evaluated and compared as chiral pseudo-stationary phases in electrokinetic capillary chromatog. The performance of these surfactants, in terms of enantioselectivity was examd. using anionic, cationic and neutral analytes. Analyses of the data suggest that the enantiomeric resols. of the analytes with these two PDCSs are dependent upon steric factors rather than no. of stereogenic centers.

IT 204689-91-8P

RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified);
SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation);
USES (Uses)

(chiral sepns. by electrokinetic capillary chromatog. using polymeric dipeptide surfactants)

RN 204689-91-8 HCAPLUS

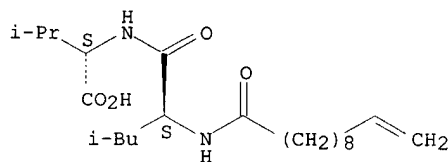
CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-88-3

CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



● Na

REFERENCE COUNT:

29

THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 6

L22 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:509605 HCAPLUS

DOCUMENT NUMBER: 131:237284

TITLE: Evaluating chiral separation interactions by use of diastereomeric polymeric dipeptide surfactants

AUTHOR(S): Billiot, Eugene; Thibodeaux, Stefan; Shamsi, Shahab; Warner, Isiah M.

CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA

SOURCE: Analytical Chemistry (1999), 71(18), 4044-4049

CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Poly sodium N-undecyl leucine-leucine (poly SULL) was used as a diagnostic tool to study chiral mol. interactions via electrokinetic chromatog. (EKC). Poly SULL has two chiral centers which are defined by two asym. carbons. Each chiral center of poly SULL can have two possible configurations (D or L). Consequently, four different optical configurations are possible within the surfactant mol. (L-L, D-D, L-D, and D-L). Five chiral analytes of various charge states and hydrophobicities were used to study the role of electrostatic interactions and hydrophobicity on chiral recognition with polymeric dipeptide surfactants. These studies lead to a proposed hypothesis for interaction of the analytes with dipeptide surfactants. The hypothesis was tested and the contribution of the double chiral centers to this interaction was evaluated using two dipeptide surfactants in which one chiral amino acid is replaced by an achiral amino acid glycine, i.e., poly sodium N-undecyl L-leucine-glycine (poly L-SULG) and poly sodium N-undecyl L-glycine-leucine (poly L-SUGL). The results reported here provide new insights into the mechanism for chiral recognition of select chiral analytes using polymeric chiral surfactants.

IT 204689-92-9 243843-88-1

RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified);

PRP (Properties); ANST (Analytical study); USES (Uses)

(chiral sepn. by micellar electrokinetic chromatog. using diastereomeric polymeric dipeptide surfactants)

RN 204689-92-9 HCAPLUS

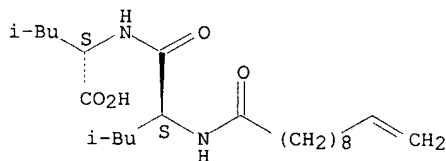
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-89-4

CMF C23 H42 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



RN 243843-88-1 HCAPLUS

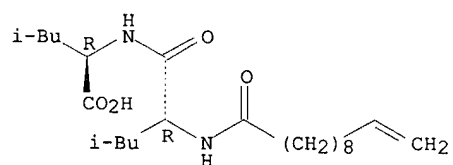
CN D-Leucine, N-(1-oxo-10-undecenyl)-D-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 243843-87-0

CMF C23 H42 N2 O4 . Na

Absolute stereochemistry.



● Na

REFERENCE COUNT:

33

THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L22 ANSWER (7) OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:71508 HCAPLUS

DOCUMENT NUMBER: 130-209966

TITLE: Synthesis of polymerized N-undecylenyl-L-amino acid and N-undecylenyl-L-peptide derivatives

AUTHOR(S): Macossay, Javier; Shamsi, Shabab A.; Warner, Isiah M.

CORPORATE SOURCE: Chemistry Department, Louisiana State University, Baton Rouge, LA, 70803, USA

SOURCE: Tetrahedron Letters (1999), 40(4), 577-580

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Micelle-forming polyamd. N-Undecylenyl-L-amino acid and N-Undecylenyl-L-peptide derivs. $\text{H}_2\text{C}:\text{CH}(\text{CH}_2)_8\text{CO}-\text{X}-\text{OH}$ (X = Ala, Val, Leu, Ile, Ala-Ala, Val-Val, Leu-Leu) have been obtained. These compds. are effective as pseudostationary phases in electrokinetic capillary electrophoresis for resoln. of racemic binaphthyl derivs. Synthetic procedures are described in detail, as well as preliminary anal. data comparing amino acid derivs., and amino acid derivs. with peptide derivs.

IT 192448-35-4P 204689-92-9P

RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(prepn. of polyamd. N-undecenoylamino acids and -peptides as pseudostationary phases in electrokinetic capillary electrophoresis for racemate resoln.)

RN 192448-35-4 HCAPLUS

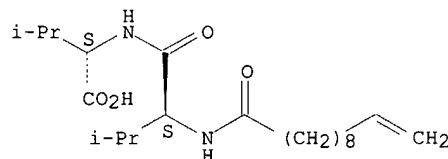
CN L-Valine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 192448-34-3

CMF C21 H38 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

RN 204689-92-9 HCAPLUS

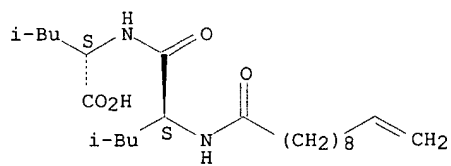
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 204689-89-4

CMF C23 H42 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

REFERENCE COUNT:

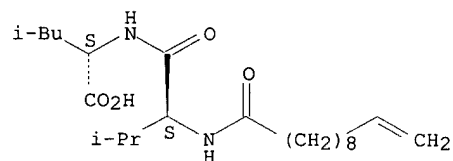
15

THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Page 11

CRN 204689-87-2
 CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



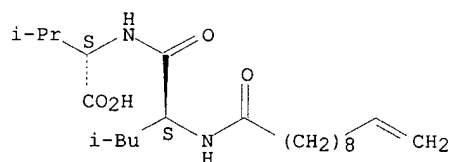
● Na

RN 204689-91-8 HCAPLUS
 CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer
 (9CI) (CA INDEX NAME)

CM 1

CRN 204689-88-3
 CMF C22 H40 N2 O4 . Na

Absolute stereochemistry.



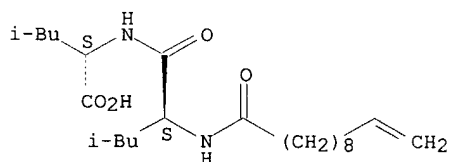
● Na

RN 204689-92-9 HCAPLUS
 CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt, homopolymer
 (9CI) (CA INDEX NAME)

CM 1

CRN 204689-89-4
 CMF C23 H42 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

=> d ibib abs hitstr 9

L22 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:410656 HCAPLUS

8/1/97

DOCUMENT NUMBER: 127:116852

TITLE: Improved Chiral Separations Using a Polymerized Dipeptide Anionic Chiral Surfactant in Electrokinetic Chromatography: Separations of Basic, Acidic, and Neutral Racemates

AUTHOR(S): Shamsi, Shahab A.; Macossay, Javier; Warner, I. M.

CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA

SOURCE: Analytical Chemistry (1997), 69(15), 2980-2987

CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two polymeric chiral anionic surfactants [poly(sodium N-undecylenoyl-L-valine) (poly-L-SUV) and poly(sodium N-undecylenoyl-L-valine-valine) (poly-L-SUVV)] are compared as pseudostationary phases for chiral sepns. of basic, acidic, and neutral enantiomers. Parameters such as pH, concn. and type of background electrolyte, concn. of polymd. chiral surfactants, and injection size were studied to study the migration behavior and optimize the chiral resoln. of several racemic analytes. At equivalent monomer concns., the migration factors for cationic enantiomers were larger with poly-L-SUV than with poly-L-SUVV. But the reverse was true for anionic enantiomers. However, in both cases, chiral recognition was significantly enhanced with poly-L-SUVV as compared to that with poly-L-SUV. It is interesting to note that the sepn. selectivity and resoln. of a neutral racemate were slightly better with the latter, but only at the expense of longer anal. time and lower efficiencies.

Different inventors (+1, -2)
102 (a)

1 DIPEPTIDE POLYMER
↓

POLYMER IT

192448-35-4

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(enantiomer detn. by electrokinetic chromatog. using polymd. dipeptide anionic chiral surfactants as pseudostationary phases)

RN 192448-35-4 HCAPLUS

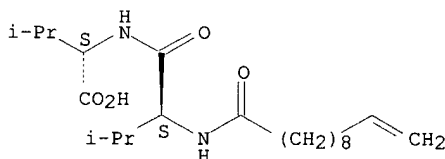
CN L-Valine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 192448-34-3

CMF C21 H38 N2 O4 . Na

Absolute stereochemistry. Rotation (-).



● Na

=> d ibib abs hitstr 1

L23 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:1626 HCAPLUS

TITLE: Polysodium N-Undecanoyl-L-leucylvalinate: A Versatile Chiral Selector for Micellar Electrokinetic Chromatography

AUTHOR(S): Shamsi, Shahab A.; Valle, Bertha C.; Billiot, Fereshteh; Warner, Isiah M.

CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA

SOURCE: Analytical Chemistry (2003), 75(3), 379-387
CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Dipeptide micelle polymers are a new class of polymeric surfactants of which the polysodium undecanoyl-L-leucylvalinate (poly-L-SULV) is a broadly applicable chiral selector for micellar electrokinetic chromatog. This neg. charged dipeptide micelle polymer is a high mol. wt. compd. with large countercurrent mobility, zero crit. micelle concn., low aggregation no., and high soly. in water or water-org. solvents. In an extensive chiral screening program, enantiosepn. of 75 racemic compds. was tested with poly-L-SULV as chiral pseudostationary phase in neutral pH and basic pH background electrolytes. A total of 58 out of 75 racemic compds. could be resolved after choosing an appropriate concn. of poly-L-SULV. Although anionic chiral analytes are difficult to resolve using poly-L-SULV, the percent success rate for chiral resoln. of cationic (77%) and neutral (85%) racemates was very high. Aspects regarding electrostatic, steric, hydrophobic, and hydrogen-bonding interactions of this dipeptide micelle polymer with various classes of chiral analytes are discussed.

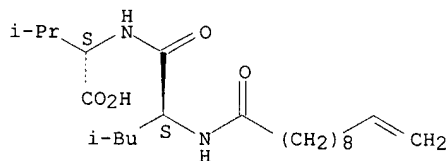
IT 204689-88-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of polysodium undecanoyl-leucylvalinate)

RN 204689-88-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● Na

REFERENCE COUNT:

28

THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 2

L23 ANSWER (2) OF 6 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: (2002) 164136 HCAPLUS

DOCUMENT NUMBER: 136340990

TITLE: Comparison of the Aggregation Behavior of 15 Polymeric and Monomeric Dipeptide Surfactants in Aqueous Solution

AUTHOR(S): Billiot, Fereshteh Haddadian; McCarroll, Matthew; Billiot, Eugene J.; Rugutt, Joseph K.; Morris, Kevin; Warner, Isiah M.

CORPORATE SOURCE: Department of Physical and Life Science, Texas A&M University-Corpus Christi, Corpus Christi, TX, 78412, USA

SOURCE: Langmuir (2002), 18(8), 2993-2997
CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The aggregation nos. of several chiral dipeptide surfactants were estd. by using fluorescence steady-state quenching techniques. Polymn. of the surfactants with .gamma. radiation resulted in mol. micelles with a lower no. of repeat units than the corresponding monomer aggregation nos. at the concn. of monomer used for polymn. The aggregation nos. of the monomers decreased with increasing size of the N-terminal R group of the dipeptide surfactants. The aggregation mechanism of the dipeptide surfactants was further studied using 1H NMR spectroscopy. The proton resonances due to NH and H.alpha. were measured above and below the crit. micelle concn. of the surfactants. From the differences in proton chem. shifts of the monomeric dipeptide surfactants and aggregation nos., a model for packing of the monomeric polar head is proposed.

IT 192448-34-3 204689-87-2 204689-88-3
204689-89-4

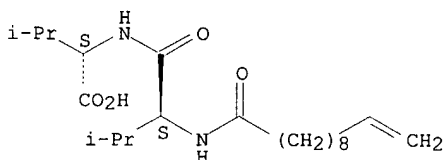
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(comparison of aggregation behaviors of dipeptide surfactant monomers and their photo-polymers in aq. solns.)

RN 192448-34-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

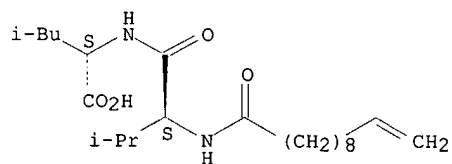


● Na

RN 204689-87-2 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA INDEX NAME)

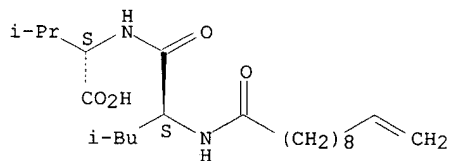
Absolute stereochemistry.



● Na

RN 204689-88-3 HCAPLUS
CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA
INDEX NAME)

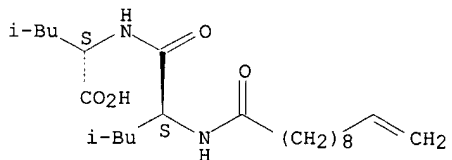
Absolute stereochemistry.



● Na

RN 204689-89-4 HCAPLUS
CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA
INDEX NAME)

Absolute stereochemistry. Rotation (-).



● Na

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 3

L23 ANSWER (3) OF 6 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:154624 HCAPLUS

DOCUMENT NUMBER: 137:118753

TITLE: Depth of penetration of binaphthyl derivatives into the micellar core of sodium undecenoyl leucyl-leucinate surfactants

AUTHOR(S): Haddadian Billiot, Fereshteh; Billiot, Eugene J.; Warner, Isiah M.

CORPORATE SOURCE: Department of Physical and Life Science, Texas A&M University-Corpus Christi, Corpus Christi, TX, 78412, USA

SOURCE: Journal of Chromatography, A (2002), 950(1-2), 233-239
CODEN: JCRAEY; ISSN: 0021-9673

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two different diastereomeric forms of sodium N-undecanoyl leucyl-leucinate (SULL) (both L,L and L,D) were used to examine the role of depth of penetration of chiral analytes into the micellar core of polymeric and monomeric surfactants on enantioselectivity. Chiral sepn. of three binaphthyl derivs., i.e. (.+-.)-1,1'-bi-naphthyl-2,2'-diamine (BNA), (.+-.)-1,1'-bi-2-naphthol (BOH), and (.+-.)-1,1'-binaphthyl-2,2'-dihydrogen phosphate (BNP), were studied. Chromatog. results suggest that BNP interacts approx. the same with both the C- and N-terminal amino acid of poly SULL, while the preferential site of interaction of this analyte with the monomeric form of SULL (mono SULL) is at the C-terminal amino acid. This indicates that BNP enantiomers penetrate deeper into the micellar core of the poly SULL than that of the mono SULL. Varying the temp. resulted in a change in the depth of penetration of BNP into the micellar core of the poly SULL. However, the enantiomers of BNA and BOH always interact preferentially with the N-terminal amino acid of SULL surfactants (both polymer and monomer), independent of the temps. studied.

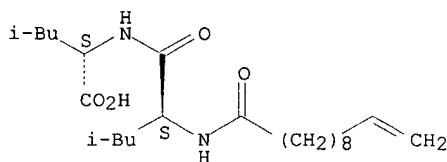
IT 204689-89-4

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(depth of penetration of binaphthyl derivs. into the micellar core of sodium undecenoyl leucyl-leucinate surfactants)

RN 204689-89-4 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● Na

REFERENCE COUNT:

16

THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 4

L23 ANSWER (4) OF 6 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:520283 HCAPLUS

DOCUMENT NUMBER: 135:273204

TITLE: Comparison of monomeric and polymeric amino acid based surfactants for chiral separations

AUTHOR(S): Billiot, Fereshteh H.; Billiot, Eugene J.; Warner, Isiah M.

CORPORATE SOURCE: Department of Physical and Life Sciences, Texas A&M University-Corpus Christi, Corpus Christi, TX, 78412, USA

SOURCE: Journal of Chromatography, A (2001), 922(1-2), 329-338
CODEN: JCRAEY; ISSN: 0021-9673

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To better understand chiral recognition with polymeric amino acid based surfactants, the chromatog. performance of 18 monomeric and polymeric surfactants were compared for chiral analytes with various charge states and hydrophobicities. In this study, four amino acids (glycine, L-alanine, L-valine, and L-leucine) were chosen, and all possible combinations of the chiral single amino acid and dipeptide surfactants were synthesized. The results indicate that polymeric surfactants usually provide better chiral resolu. for enantiomers of lorazepam, temazepam, 1,1'-bi-2-naphthol, and propranolol as compared to monomeric surfactants. In contrast, monomers perform better for chiral recognition of the 1,1'-bi-2-naphthyl-2,2'-diyl hydrogenphosphate enantiomers.

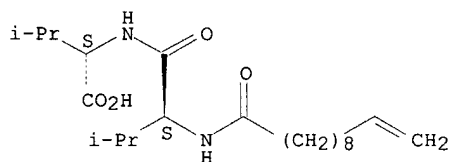
IT 192448-34-3P 204689-87-2P 204689-88-3P
204689-89-4P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and comparison of monomeric and polymeric amino acid based surfactants for chiral sepn.)

RN 192448-34-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA
INDEX NAME)

Absolute stereochemistry. Rotation (-).

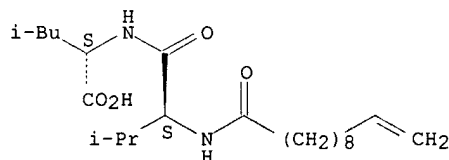


● Na

RN 204689-87-2 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA
INDEX NAME)

Absolute stereochemistry.



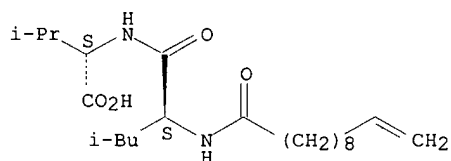
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RN 204689-88-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA
INDEX NAME)

INDEX NAME)

Absolute stereochemistry.

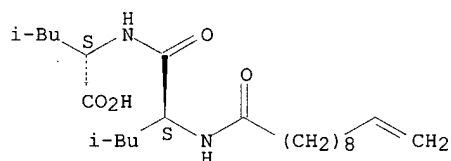


● Na

RN 204689-89-4 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA
INDEX NAME)

Absolute stereochemistry. Rotation (-).



● Na

REFERENCE COUNT:

25

THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 5

L23 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:83984 HCAPLUS

DOCUMENT NUMBER: 132:293993

TITLE: NMR study of the interaction of monomeric and polymeric chiral surfactants with (R)- and (S)-1,1'-binaphthyl-2,2'-diyl hydrogen phosphate

AUTHOR(S): Rugutt, Joseph K.; Billiot, Eugene; Warner, Isiah M.

CORPORATE SOURCE: Department of Chemistry, Massachusetts College of Liberal Arts, North Adams, MA, 01247-4100, USA

SOURCE: Langmuir (2000), 16(7), 3022-3029

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chiral discrimination of enantiomers of 1,1'-binaphthyl-2,2'-diyl hydrogen phosphate (BNDHP) by monomeric chiral surfactants (CS), sodium N-undecylenyl-L-valine-L-leucine and sodium N-undecylenyl-L-leucine-L-valine, and related polymers is investigated by high-field one (1D)- and two-dimensional (2D) NMR spectroscopy. A general property of the high-resoln. ¹H NMR spectra of monomeric CS in 90% H₂O/10% D₂O is the appearance of downfield well-resolved chem. shift signals corresponding to the alpha (.alpha.H) protons of valine (Val.alpha.H) and leucine (Leu.alpha.H) amino acid residues. The remaining skeletal protons resonate in the region 0.5-2.5 ppm, giving rise to an envelope of poorly resolved chem. shifts. The ¹H NMR signals of (R)- and (S)-BNDHP were enantiomerically sepd. into six sets of peaks in the presence of CS. The conformational anal. by means of nuclear Overhauser effect spectroscopy expts. indicates that the CS mols. adopt folded conformations in aq. soln. The multiple interactions of (S)-BNDHP and CS obtained from intermol. rotating frame Overhauser effect NMR spectroscopy is direct evidence on the mechanism of chiral recognition in aq. media.

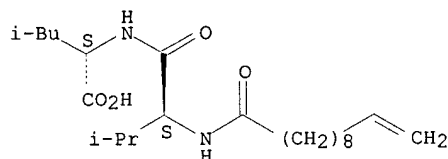
IT 204689-87-2P 204689-88-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(NMR study of chiral recognition between binaphthyldiyl hydrogen phosphate and chiral surfactants)

RN 204689-87-2 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

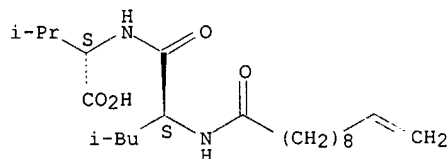


● Na

RN 204689-88-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● Na

AUDET 09/876,304

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 6

L23 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:136125 HCAPLUS

DOCUMENT NUMBER: 128:230655

TITLE: Chiral Separations Using Dipeptide Polymerized

Surfactants: Effect of Amino Acid Order

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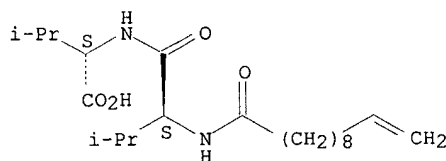
AB Chiral sepns. using various polymd. dipeptide surfactants in electrokinetic capillary chromatog. (EKC) are investigated. The two main dipeptide surfactants used in this study were sodium N-undecylenyl-L-valine-L-leucine (L-SUVL), and sodium N-undecylenyl-L-leucine-L-valine (L-SULV). These studies were performed in order to det. if the order of amino acids in dipeptide surfactants is important in terms of chiral recognition and sepns. Both the monomer and the polymer of these two surfactants were compared for the sepn. of two model atropisomers, (.-.-)-1,1'-bi-2-naphthol (BOH) and (.-.-)-1,1'-bi-2-naphthyl-2,2'-diyl hydrogen phosphate (BNP). Some advantages and disadvantages of the polymer relative to the monomer are discussed. Four other surfactants, the polymers of sodium N-undecylenyl-L-leucine-L-leucine (L-SULL), sodium N-undecylenyl-L-valine-L-valine (L-SUVV), sodium N-undecylenyl-L-valine (L-SUV), and sodium N-undecylenyl-L-leucine (L-SUL), were also used in this study, and their performance was compared to that of poly(L-SULV). These data show conclusively that the order of amino acids in dipeptide surfactants has a dramatic effect on chiral recognition. These investigations indicate that poly(L-SULV) provides the best enantioselectivity among the four dipeptide and two single amino acid surfactants for the sepn. of BNP and BOH. The advantages of poly(L-SULV) are demonstrated via the ultrafast sepn. of the enantiomers of BNP and BOH in less than 1 min.

IT 192448-34-3P 204689-87-2P 204689-88-3P
204689-89-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(effect of amino acid order on chiral sepns. using dipeptide polymd. surfactants)

RN 192448-34-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● Na

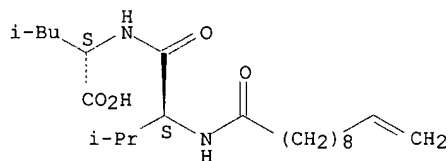
RN 204689-87-2 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-valyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

[SAME AS REF. #1 JULY 8]

Different ~~isomers~~ (+1)
102 (a)COM
CL 45

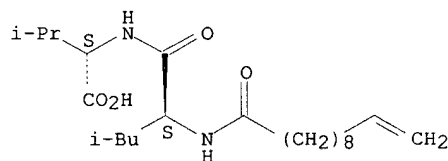


● Na

RN 204689-88-3 HCAPLUS

CN L-Valine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

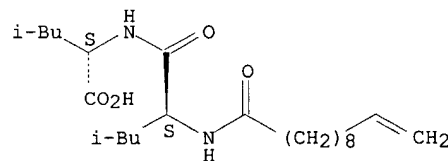


● Na

RN 204689-89-4 HCAPLUS

CN L-Leucine, N-(1-oxo-10-undecenyl)-L-leucyl-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● Na

* (6270640 97
5770084 94
6090250 70
6013738 60
~~6476046~~ 54
6271195 50
6376674 50
6287765 48
6437121 47
5955509 43
5514818 43
5981267 42
6359118 42
6436909 41
5268442 41
4801734 41
6083372 41
5292416 40
5306561 40
6277782 40
6333426 40
6391862 40
6365173 40
5192406 39
6359054 39
6316613 39
5807482 39
5811532 39
6312900 39
5772888 38
5589069 38
5403898 38
5877495 38
6188065 38
6335525 38
6258790 38
6309882 38
6335194 38
6410323 38
4828799 38
5611903 38
4909935 37
6465495 37
6444723 37
6218468 37
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6353012 37
5889180 36

Wasson et al. 204/451
" 210/635

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5262313 36
5246577 36

09876304 CLS

Most Frequently Occurring Classifications of Patents Returned
From A Search of 09876304 on March 13, 2003

Original Classifications

3 204/451
3 250/288
3 435/375
2 204/454
2 210/198.2
2 210/635
2 435/6
2 514/44
2 525/88

Cross-Reference Classifications

9 210/656
8 536/24.5
6 536/23.1
5 210/198.2
5 210/635
4 204/601
4 435/325
4 435/91.1
4 536/24.31
3 210/502.1
3 435/375
3 435/6
3 536/24.3
2 95/88
2 204/455
2 204/605
2 210/634
2 435/178
2 436/161
2 502/401
2 514/44
2 525/241
2 525/242
2 525/243
2 525/262
2 525/445
2 525/447
2 525/451
2 525/89
2 528/15
2 528/25
2 528/26

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2 528/28
2 528/29
2 528/30
2 528/31
2 536/103
2 536/123.1
2 536/24.1
2 536/24.33
2 536/56
2 556/450

Combined Classifications

9 210/656
8 536/24.5
7 210/198.2
7 210/635
6 435/375
6 536/23.1
5 435/6
4 204/451
4 204/601
4 435/325
4 435/91.1
4 514/44
4 536/24.31
3 210/502.1
3 210/634
3 250/288
3 528/25
3 536/103
3 536/24.3
2 95/88
2 204/454
2 204/455
2 204/605
2 424/426
2 435/178
2 436/161
2 502/401
2 525/241
2 525/242
2 525/243
2 525/262
2 525/445
2 525/447
2 525/451
2 525/88
2 525/89

09876304_CLS

2 528/15
2 528/26
2 528/28
2 528/29
2 528/30
2 528/31
2 536/123.1
2 536/127
2 536/24.1
2 536/24.33
2 536/56
2 556/450

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Titles of Most Frequently Occurring Classifications of Patents Returned

From A Search of 09876304 on March 13, 2003

9 210/656 (0 OR, 9 XR)
 Class 210 : LIQUID PURIFICATION OR SEPARATION
 210/600 PROCESSES
 210/656 .Chromatography

8 536/24.5 (0 OR, 8 XR)
 Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES
 536/1.11 .Carbohydrates or derivatives
 536/18.7 ..Nitrogen containing
 536/22.1 ...N-glycosides, polymers thereof, metal
 derivatives (e.g., nucleic acids, oligonucleotides, etc.)

536/23.1DNA or RNA fragments or modified forms
 thereof (e.g., genes, etc.)
 536/24.5Nucleic acid expression inhibitors

7 210/198.2 (2 OR, 5 XR)
 Class 210 : LIQUID PURIFICATION OR SEPARATION
 210/198.1 WITH MEANS TO ADD TREATING MATERIAL
 210/198.2 .Chromatography

7 210/635 (2 OR, 5 XR)
 Class 210 : LIQUID PURIFICATION OR SEPARATION
 210/600 PROCESSES
 210/634 .Liquid/liquid solvent or colloidal extraction
 or diffusing or passing through septum selective as to
 material of a component of liquid; such diffusing or
 passing being effected by other than only an ion exchange
 or sorption process
 210/635 ..Liquid/liquid or gel type (i.e., jellylike)
 chromatography

6 435/375 (3 OR, 3 XR)
 Class 435 : CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY
 435/325 ANIMAL CELL, PER SE (E.G., CELL LINES, ETC.);
 COMPOSITION THEREOF; PROCESS OF PROPAGATING, MAINTAINING OR

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HEREOF; PROCESS
OR COMPOSITION
N CONTAINING AN
435/375
PRESERVING AN ANIMAL CELL OR COMPOSITION T
OF ISOLATING OR SEPARATING AN ANIMAL CELL
THEREOF; PROCESS OF PREPARING A COMPOSITIO
ANIMAL CELL; CULTURE MEDIA THEREFORE
.Method of regulating cell metabolism or
physiology

6 536/23.1 (0 OR, 6 XR)
Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
532-570 SERIES
536/1.11 .Carbohydrates or derivatives
536/18.7 ..Nitrogen containing
536/22.1 ...N-glycosides, polymers thereof, metal
derivatives (e.g., nucleic acids, oligonuc
leotides, etc.)
536/23.1DNA or RNA fragments or modified forms
thereof (e.g., genes, etc.)

5 435/6 (2 OR, 3 XR)
Class 435 : CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY
435/4 MEASURING OR TESTING PROCESS INVOLVING ENZYMES
OR MICRO-ORGANISMS; COMPOSITION OR TEST ST
RIP THEREFORE;
EST STRIP
435/6 .Involving nucleic acid

4 204/451 (3 OR, 1 XR)
Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
204/450 .Electrophoresis or electro-osmosis processes
and electrolyte compositions therefor when
not provided for elsewhere
204/451 ..Capillary electrophoresis

4 204/601 (0 OR, 4 XR)
Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
204/193 APPARATUS
204/600 .Electrophoretic or electro-osmotic apparatus
204/601 ..Capillary electrophoresis type

4 435/325 (0 OR, 4 XR)

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Class 435 : CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY

435/325 ANIMAL CELL, PER SE (E.G., CELL LINES, ETC.);
COMPOSITION THEREOF; PROCESS OF PROPAGATING
, MAINTAINING OR
PRESERVING AN ANIMAL CELL OR COMPOSITION TH
EREOF; PROCESS
OF ISOLATING OR SEPARATING AN ANIMAL CELL O
R COMPOSITION
THEREOF; PROCESS OF PREPARING A COMPOSITION
CONTAINING AN
ANIMAL CELL; CULTURE MEDIA THEREFORE

4 435/91.1 (0 OR, 4 XR)

Class 435 : CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY

435/41 MICRO-ORGANISM, TISSUE CELL CULTURE OR ENZYME
USING PROCESS TO SYNTHESIZE A DESIRED
CHEMICAL COMPOUND OR
COMPOSITION

435/72 .Preparing compound containing saccharide
radical

435/84 ..Preparing nitrogen-containing saccharide

435/85 ...N-glycoside

435/89Nucleotide

435/91.1Polynucleotide (e.g., nucleic acid,
oligonucleotide, etc.)

4 514/44 (2 OR, 2 XR)

Class 514 : DRUG, BIO-AFFECTING AND BODY TREATING
COMPOSITIONS

514/1 DESIGNATED ORGANIC ACTIVE INGREDIENT CONTAININ

G

(DOAI)
514/23 .Carbohydrate (i.e., saccharide radical
containing) DOAI

514/42 ..N-glycoside

514/43 ...Nitrogen containing hetero ring

514/44Polynucleotide (e.g., RNA, DNA, etc.)

4 536/24.31 (0 OR, 4 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/18.7 ..Nitrogen containing

536/22.1 ...N-glycosides, polymers thereof, metal
derivatives (e.g., nucleic acids, oligon

ucleotides, etc.)

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536/23.1DNA or RNA fragments or modified forms
thereof (e.g., genes, etc.)
536/24.3Probes for detection of specific
nucleotide sequences or primers for the sy
nthesis of DNA or
RNA
536/24.31Probes for detection of animal nucleotid
e
sequences

3 210/502.1 (0 OR, 3 XR)
Class 210 : LIQUID PURIFICATION OR SEPARATION
210/348 FILTER
210/500.1 .Material
210/502.1 ..Sorpative component containing

3 210/634 (1 OR, 2 XR)
Class 210 : LIQUID PURIFICATION OR SEPARATION
210/600 PROCESSES
210/634 .Liquid/liquid solvent or colloidal extraction
or diffusing or passing through septum sele
ctive as to
material of a component of liquid; such dif
fusing or
passing being effected by other than only a
n ion exchange
or sorption process

3 250/288 (3 OR, 0 XR)
Class 250 : RADIANT ENERGY
250/281 IONIC SEPARATION OR ANALYSIS
250/288 .With sample supply means

3 528/25 (1 OR, 2 XR)
Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES
528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE
SILICON-TO-HYDROGEN OR -CARBON BOND
528/25 ..With organic silicon-free reactant

3 536/103 (1 OR, 2 XR)
Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
532-570 SERIES
536/1.11 .Carbohydrates or derivatives
536/102 ..Starch or derivative
536/103 ...Dextrin or derivative

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3 536/24.3 (0 OR, 3 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/18.7 ..Nitrogen containing

536/22.1 ...N-glycosides, polymers thereof, metal
derivatives (e.g., nucleic acids, oligonu

cleotides, etc.)

536/23.1DNA or RNA fragments or modified forms
thereof (e.g., genes, etc.)536/24.3Probes for detection of specific
nucleotide sequences or primers for the syn

thesis of DNA or

RNA

2 95/88 (0 OR, 2 XR)

Class 095 : GAS SEPARATION: PROCESSES

95/82 CHROMATOGRAPHY

95/88 .Specific column packing or sorbent material
(e.g., particle size, composition, etc.)

2 204/454 (2 OR, 0 XR)

Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY

204/450 .Electrophoresis or electro-osmosis processes
and electrolyte compositions therefor whe

n not provided for

elsewhere

204/451 ..Capillary electrophoresis

204/454 ...With adjustment or alteration of
electro-osmotic bulk flow

2 204/455 (0 OR, 2 XR)

Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY

204/450 .Electrophoresis or electro-osmosis processes
and electrolyte compositions therefor whe

n not provided for

elsewhere

204/451 ..Capillary electrophoresis

204/455 ...Using gel-filled capillary

2 204/605 (0 OR, 2 XR)

Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY

204/193 APPARATUS

204/600 .Electrophoretic or electro-osmotic apparatus

204/601 ..Capillary electrophoresis type

204/605 ...Gel filled

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2 424/426 (1 OR, 1 XR)
 Class 424 : DRUG, BIO-AFFECTING AND BODY TREATING
 COMPOSITIONS
 424/400 PREPARATIONS CHARACTERIZED BY SPECIAL PHYSICAL
 FORM
 424/422 .Implant or insert
 424/423 ..Surgical implant or material
 424/426 ...Errodable, resorbable, or dissolving

2 435/178 (0 OR, 2 XR)
 Class 435 : CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY
 435/174 CARRIER-BOUND OR IMMOBILIZED ENZYME OR
 MICROBIAL CELL; CARRIER-BOUND OR IMMOBILI
 ZED CELL;
 PREPARATION THEREOF
 435/177 .Enzyme or microbial cell is immobilized on or
 in an organic carrier
 435/178 ..Carrier is carbohydrate

2 436/161 (0 OR, 2 XR)
 Class 436 : CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL
 TESTING
 436/161 INCLUDING CHROMATOGRAPHY

2 502/401 (0 OR, 2 XR)
 Class 502 : CATALYST, SOLID SORBENT, OR SUPPORT THEREFOR:
 PRODUCT OR PROCESS OF MAKING
 502/400 SOLID SORBENT
 502/401 .Organic

2 525/241 (0 OR, 2 XR)
 Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
 OF THE CLASS 520 SERIES
 525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
 OF SOLID POLYMER OR SICP WITH SICP OR SP
 FI; MIXING OF SICP
 POLYMER WITH A
 PROCESSES OF
 FORMING OR REACTING; OR THE RESULTANT PR
 ODUCT OF ANY OF THE
 ABOVE OPERATIONS
 525/55 ..At least one solid polymer derived from
 ethylenic reactants only
 525/191 ...Polymer mixture of two or more solid

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rated reactants
with a chemical
f preparing any
only; or mixtures of said polymer mixture
treating agent; or products or processes o
of the above mixtures

525/241Solid polymer derived from an aromatic
hydrocarbon reactant

2 525/242 (0 OR, 2 XR)

Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR SPF

I; MIXING OF SICP

POLYMER WITH A

PROCESSES OF

DUCT OF ANY OF THE

WITH AN ETHYLENIC AGENT; MIXING OF SOLID

CHEMICAL TREATING OR ETHYLENIC AGENT; OR

FORMING OR REACTING; OR THE RESULTANT PRO

ABOVE OPERATIONS

525/55 ..At least one solid polymer derived from
ethylenic reactants only

525/242 ...Polymer derived from ethylenic reactants
only mixed with ethylenic reactant

2 525/243 (0 OR, 2 XR)

Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR SP

FI; MIXING OF SICP

POLYMER WITH A

PROCESSES OF

ODUCT OF ANY OF THE

WITH AN ETHYLENIC AGENT; MIXING OF SOLID

CHEMICAL TREATING OR ETHYLENIC AGENT; OR

FORMING OR REACTING; OR THE RESULTANT PR

ABOVE OPERATIONS

525/55 ..At least one solid polymer derived from
ethylenic reactants only

525/242 ...Polymer derived from ethylenic reactants
only mixed with ethylenic reactant

525/243Reactions with ethylenic reactants in two
or more diverse phases, e.g., bulk, emulsio

n, melt,

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solution, etc.

2 525/262 (0 OR, 2 XR)
Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES
525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR S
PFI; MIXING OF SICP
D POLYMER WITH A
R PROCESSES OF
RODUCT OF ANY OF THE
ABOVE OPERATIONS
525/55 ..At least one solid polymer derived from
ethylenic reactants only
525/242 ...Polymer derived from ethylenic reactants
only mixed with ethylenic reactant
525/244Contacting a solid polymer derived from
ethylenic reactants only with an ethylenic
reactant in the
presence of a specified material
525/262Specified material contains a carboxylic
acid or derivative

2 525/445 (0 OR, 2 XR)
Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES
525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR S
PFI; MIXING OF SICP
D POLYMER WITH A
R PROCESSES OF
RODUCT OF ANY OF THE
ABOVE OPERATIONS
525/418 ..Solid polymer derived from at least one
carboxylic acid or derivative
525/419 ...Solid polymer derived from at least one
lactam; from an amino carboxylic acid or
derivative; or
from a polycarboxylic acid or derivative
525/437Solid polymer derived from polyhydroxy
reactant and polycarboxylic acid or deriva
tive reactant; or

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carboxylic acid derived from di- or higher ester of a poly
as sole reactant

525/445Mixed with ethylenically unsaturated
reactant or polymer therefrom

2 525/447 (0 OR, 2 XR)

Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR S

PFI; MIXING OF SICP

D POLYMER WITH A

R PROCESSES OF

RODUCT OF ANY OF THE

WITH AN ETHYLENIC AGENT; MIXING OF SOLI

CHEMICAL TREATING OR ETHYLENIC AGENT; O

FORMING OR REACTING; OR THE RESULTANT P

ABOVE OPERATIONS

525/418 ..Solid polymer derived from at least one
carboxylic acid or derivative

525/419 ...Solid polymer derived from at least one
lactam; from an amino carboxylic acid or

derivative; or

525/437 from a polycarboxylic acid or derivative

....Solid polymer derived from polyhydroxy
reactant and polycarboxylic acid or deriva

tive reactant; or

carboxylic acid

derived from di- or higher ester of a poly

as sole reactant

525/447Solid polymer derived from polycarboxylic
acid or derivative and a polyhydroxy compou

nd derived from

reactant containing ethylenic unsaturation

2 525/451 (0 OR, 2 XR)

Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR SPF

I; MIXING OF SICP

POLYMER WITH A

PROCESSES OF

DUCT OF ANY OF THE

WITH AN ETHYLENIC AGENT; MIXING OF SOLID

CHEMICAL TREATING OR ETHYLENIC AGENT; OR

FORMING OR REACTING; OR THE RESULTANT PRO

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ABOVE OPERATIONS

525/418 ..Solid polymer derived from at least one
carboxylic acid or derivative
525/451 ...Solid polymer derived from carboxylic acid
or derivative derived from ethylenically un
saturated
reactant

2 525/88 (2 OR, 0 XR)

Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR SPF
I; MIXING OF SICP
POLYMER WITH A
PROCESSES OF
DUCT OF ANY OF THE

ABOVE OPERATIONS

525/55 ..At least one solid polymer derived from
ethylenic reactants only
525/88 ...Mixing of solid block or block-type
copolymer with other solid polymer; mixing
of said polymer
mixture with a chemical treating agent; mix
ing of a block
or block-type copolymer with SICP or with S
PFI; or
processes of forming or reacting; or the re
sultant product
of any of the above operations

2 525/89 (0 OR, 2 XR)

Class 525 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

525/50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING
OF SOLID POLYMER OR SICP WITH SICP OR SP
FI; MIXING OF SICP
POLYMER WITH A
PROCESSES OF
ODUCT OF ANY OF THE

ABOVE OPERATIONS

525/55 ..At least one solid polymer derived from

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ethylenic reactants only

525/88 ...Mixing of solid block or block-type
 of said polymer copolymer with other solid polymer; mixing
 mixture with a chemical treating agent; mi
 xing of a block or block-type copolymer with SICP or with
 SPFI; or processes of forming or reacting; or the r
 esultant product of any of the above operations
 525/89Mixture contains two or more solid block o
 r block-type copolymers

2 528/15 (0 OR, 2 XR)

Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE
SILICON-TO-HYDROGEN OR -CARBON BOND528/12 ..Polymerizing in the pressence of a specified
material other than a reactant

528/14 ...Material is a metal-containing material

528/15Material contains a Group VIII metal atom

2 528/26 (0 OR, 2 XR)

Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE
SILICON-TO-HYDROGEN OR -CARBON BOND

528/25 ..With organic silicon-free reactant

528/26 ...Organic Si-free reactant is a carboxylic
acid or derivative

2 528/28 (0 OR, 2 XR)

Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE
SILICON-TO-HYDROGEN OR -CARBON BOND

528/25 ..With organic silicon-free reactant

528/28 ...Organic Si-free reactant is a
nitrogen-containing compound

2 528/29 (0 OR, 2 XR)

Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
OF THE CLASS 520 SERIES

528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE

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SILICON-TO-HYDROGEN OR -CARBON BOND

528/25 ..With organic silicon-free reactant
 528/29 ...Organic Si-free reactant is an alcohol or
 alcoholate

2 528/30 (0 OR, 2 XR)

Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
 OF THE CLASS 520 SERIES

528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE
 SILICON-TO-HYDROGEN OR -CARBON BOND

528/30 ..From silicon-containing reactant having at
 least one polyvalent atom other than carbon

, oxygen, or

nitrogen

2 528/31 (0 OR, 2 XR)

Class 528 : SYNTHETIC RESINS OR NATURAL RUBBERS -- PART
 OF THE CLASS 520 SERIES

528/10 .FROM SILICON REACTANT HAVING AT LEAST ONE
 SILICON-TO-HYDROGEN OR -CARBON BOND

528/31 ..Silicon reactant contains a
 silicon-to-hydrogen bond

2 536/123.1 (0 OR, 2 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/123.1 ..Polysaccharides

2 536/127 (1 OR, 1 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/124 ..Processes

536/127 ...Purification or recovery

2 536/24.1 (0 OR, 2 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/18.7 ..Nitrogen containing

536/22.1 ...N-glycosides, polymers thereof, metal
 derivatives (e.g., nucleic acids, oligonu

cleotides, etc.)

536/23.1DNA or RNA fragments or modified forms
 thereof (e.g., genes, etc.)

536/24.1Non-coding sequences which control

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transcription or translation processes (e.g
 ., promoters,
 operators, enhancers, ribosome binding site
 s, etc.)

2 536/24.33 (0 OR, 2 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/18.7 ..Nitrogen containing

536/22.1 ...N-glycosides, polymers thereof, metal
 derivatives (e.g., nucleic acids, oligon

ucleotides, etc.)

536/23.1DNA or RNA fragments or modified forms
 thereof (e.g., genes, etc.)

536/24.3Probes for detection of specific
 nucleotide sequences or primers for the sy

ntthesis of DNA or

RNA

536/24.33Primers

2 536/56 (0 OR, 2 XR)

Class 536 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES

536/1.11 .Carbohydrates or derivatives

536/56 ..Cellulose or derivative

2 556/450 (0 OR, 2 XR)

Class 556 : ORGANIC COMPOUNDS -- PART OF THE CLASS
 532-570 SERIES

556/400 .SILICON CONTAINING

556/450 ..Two silicons bonded directly to the same
 oxygen

abstract 1
acc 1
acceptor 1
achievable 1
acid 8
acidic 1
acids 1
active 2
activity 1
addition 3
additives 1
administration 1
adsorbents 1
advantage 1
against 1
agents 1
aggregates 5
aggregation 1
agricultural 1
al 14
alanine 1
aldrich 1
all 1
allowed 1
allowing 1
alp 3
alprenolol 2
also 6
although 1
amino 8
amphophilic 1
an 11
anal 9
analogues 1
analyses 1
analytes 2
analytical 3
and 69
andm 1
andpoly 1
andy 1
anionic 2
another 2
anthryl 2
application 2
applications 2
approach 1
appropriate 2

aqueous 4
are 15
armstrong 2
art 1
as 16
assigned 1
associate 2
associated 3
asterisk 1
at 6
attached 2
attractive 1
attributable 1
averages 1
background 1
baczuk 1
based 2
basic 1
be 19
because 5
been 7
behavior 2
behaviors 1
being 1
beneficial 2
better 2
between 11
bge 1
bilayer 1
bile 1
bilhiot 1
binaphthyl 2
bnp 3
bond 2
bonding 1
bonds 1
both 7
brief 1
brush 1
buffers 1
by 17
called 2
calories 1
can 7
capillaries 1
capillary 14
carboxyl 2
carriers 2

case 1
catalysis 1
category 1
cationic 1
causes 1
cellulose 1
center 2
centers 1
central 1
certain 3
chain 1
challenging 1
characteristic 1
characterization 1
charge 1
charged 1
chelating 1
chem 14
chemical 1
chemistry 1
chiral 80
chromatog 9
chromatograms 2
chromatographia 1
chromatographic 4
chromatography 18
cmc 5
co 1
column 1
common 1
commonly 3
commun 1
compact 1
company 1
comparable 1
comparative 1
compared 5
comparing 2
comparison 1
complex 3
complexation 1
complexes 3
complexing 1
complicated 1
components 1
compositions 1
compound 1
compounds 2

concentration 8
concentrations 2
configuration 1
considerable 1
considerations 1
contain 1
containing 3
contains 1
continue 1
continuing 1
contrast 4
control 1
conventional 11
corisiderable 1
covalent 1
critical 3
crown 2
ct 1
current 1
cyclodextrin 2
cyclodextrins 2
deeply 1
degree 2
deleterious 2
density 1
dependent 1
depict 2
depicts 4
derivatized 1
derived 1
description 1
design 1
desired 1
determines 1
developed 1
development 1
diagram 1
difference 3
different 1
differing 1
dihydroxyphenylalanine 2
dipeptide 6
dipeptides 1
disclose 2
disclosed 1
discloses 2
disclosure 1
disclosures 1

discovered 1
discriminate 1
discussion 1
distinct 1
diyl 2
dna 1
do 4
dobashi 2
donor 1
dopa 1
double 1
down 1
drawings 1
drug 1
drugs 3
due 3
dynamic 8
early 4
easier 2
ed 1
effect 1
effects 2
efficacy 1
efficiencies 3
effort 1
efforts 1
either 2
ek 8
electrochemical 1
electrokinetic 15
electrolytes 1
electromigration 1
electron 1
electrophoresis 5
electrophoretic 2
electrostatic 1
eliminate 3
ellipsoid 1
employ 1
employed 1
employing 3
employs 1
emulsion 2
enantiomer 2
enantiomeric 5
enantiomers 12
enantioselective 1
enantioselectivity 1

end 1
energies 1
enhance 1
enhanced 5
enhancing 1
enoyl 3
enrichment 2
equilibria 1
equilibrium 3
equilibriumbetween 1
essentially 1
et 19
eta 1
ethanol 2
ethers 2
eugene 1
evaluated 2
evaluation 1
even 2
examine 1
example 6
exchange 2
exhibit 2
exist 2
expense 1
experiments 2
explainedby 1
express 8
extensively 1
exterior 1
extraction 3
factors 1
faster 2
fee 1
fendler 1
figure 5
figures 3
file 1
first 2
fl 2
food 1
for 26
form 7
formation 2
formed 2
formulations 1
free 2
frequently 2

from 11
froma 1
funded 1
furthermore 1
gas 2
gassmann 1
gave 1
general 2
generate 1
generated 2
generation 1
gives 1
glutamic 2
gm 1
governing 1
government 2
grade 1
grant 1
greater 1
greatly 2
group 3
groups 4
growing 1
guest 1
hamada 1
harmful 1
has 6
have 14
having 4
head 1
health 1
heat 4
high 11
higher 1
host 1
how 1
however 2
hplc 1
hpo 1
human 1
hydrocarbon 2
hydrogen 3
hydrophilic 2
hydrophobic 4
identical 5
if 1
ij 1
illustrate 1

illustration 1
image 2
immobilized 2
immunodeficiency 1
important 4
improved 2
in 55
include 1
included 1
including 1
increasingly 1
individual 5
induced 1
industries 1
inert 1
inexpensive 1
initial 2
institutes 1
interaction 1
interactions 12
interfere 1
interior 2
intermolecular 1
into 1
invention 3
involved 1
ion 3
ionizable 1
ions 3
is 22
ishihama 1
isiah 1
isomer 1
isomeric 1
isomers 3
issue 1
issued 1
it 1
its 1
japanese 1
known 2
kuhn 1
large 1
larrabee 1
late 1
later 1
least 2
lec 3

lett 1
leydet 1
ligand 2
ligands 5
like 1
liq 1
liquid 8
lo 3
louis 1
low 1
lower 1
magnified 1
mail 8
manufacturing 1
many 5
manyareas 1
marketed 1
marketing 1
mass 2
materials 5
may 10
meaning 1
measurements 1
mecc 1
mechanical 2
med 1
media 1
medicinally 1
medium 2
membrane 1
membranes 1
metal 2
methionyl 1
method 1
methods 5
micellar 13
micelle 15
micelles 52
microenvironment 1
milwaukee 1
minimize 1
minimum 1
mirror 2
miscellaneous 1
mixed 1
mixture 5
mixtures 6
mo 1

mobile 2
mobilities 1
model 1
molar 1
mole 1
molecules 5
monoanions 1
monomeric 1
monomers 6
monomolecular 2
monopeptide 2
more 3
most 3
much 2
multicomponent 1
must 3
na 2
namely 1
national 1
natural 1
naturally 4
need 2
neutral 1
new 1
no 12
non 6
nonionic 1
not 3
novel 1
novotny 1
now 2
number 3
obtained 3
occurring 4
of 88
ofan 1
ofchiral 1
ofenantiomeric 1
ofn 1
ofpurposes 1
often 7
oftroublesome 1
oligomerized 1
oligopeptide 4
on 6
one 10
open 2
optical 6

optimized 3
or 15
order 2
organic 4
other 7
otherwise 8
otsuka 1
over 1
overall 1
paid 1
paleos 1
palmer 2
partially 1
particularly 2
partitioning 1
patent 2
penetrate 1
peptide 1
per 1
perform 1
performance 2
pertains 1
ph 1
pharmaceutical 2
pharmaceutically 1
phase 11
phases 1
phenylalanyl 1
phosphate 2
phys 1
pirkie 2
plates 1
point 4
polar 2
poly 13
polyanions 3
polyl 1
polymenzed 2
polymer 1
polymeric 6
polymerizable 1
polymerization 2
polymerized 34
polymerizedmicellarmediumbyextractionwith 1
polymers 1
polyrnerized 1
polysaccharides 1
poor 1

power 2
pp 21
predominantly 1
preparative 2
prior 1
problems 1
process 2
prolyl 1
prop 3
propanolol 1
properties 7
property 1
proposed 1
propranolol 1
proteins 1
protocols 1
prototype 1
provides 1
pseudostationary 2
purchased 1
racemic 10
radiation 1
rates 1
readily 2
reagent 1
received 1
recently 2
recognition 6
recommends 1
recovered 2
recovering 2
recovery 2
reduced 1
reduces 1
reflectingpractical 1
regardless 1
regulations 1
relatively 1
reported 2
represents 2
repulsion 1
requir 1
required 1
res 3
resolution 2
resolving 2
respectively 3
result 2

resulting 3
results 1
reversible 1
review 1
rights 1
rigid 1
rigidity 1
rna 1
rod 1
roughly 1
rule 5
salt 1
same 1
saponins 1
scale 5
schematic 2
schematically 1
sci 1
science 2
second 1
see 10
selective 1
selectivities 1
separate 1
separated 2
separating 1
separation 25
separations 23
serial 1
series 1
shahab 1
shamsi 1
shape 1
shown 1
sigma 2
significant 1
similar 1
simple 2
simplifying 1
simultaneous 2
single 2
site 3
size 1
small 4
smaller 1
so 1
soc 1
sodium 3

sodiumn 2
solute 5
solution 6
solutions 2
solvation 1
solvent 5
solvents 1
some 2
species 1
spectroscopic 1
sphere 1
spheroid 1
st 1
stability 1
stable 1
standard 1
state 1
states 2
stationary 5
stefan 1
stereochemically 1
steric 1
strategies 3
stronger 2
structural 1
structure 4
studies 1
substrate 1
success 1
successful 1
successfully 1
such 4
sum 1
superior 1
surfactant 17
surfactants 16
surprising 1
surrounding 1
suv 5
suvv 5
synthesized 1
synthesizing 1
synthetic 1
systems 6
tabor 1
taguchi 1
tail 1
takes 1

technique 1
techniques 3
terabe 5
tests 1
tfae 3
thalidomide 1
than 6
that 9
the 119
their 4
theoretical 1
there 3
therefore 3
these 4
they 1
thibodeaux 1
this 5
those 2
three 7
through 3
thumb 1
thus 2
time 2
to 35
today 1
transfer 2
trifluoro 2
troublesome 1
tubular 2
turn 1
turned 1
two 8
type 4
typically 5
undec 2
undecenoate 2
undecw 1
undecylate 1
undecylenyl 2
undesirable 1
united 2
unsaturated 1
until 1
use 7
used 18
useful 2
uses 1
using 7

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usually 2
utilization 1
valine 5
valme 1
value 1
values 1
variety 1
very 1
vesicles 1
via 1
virus 1
viruses 1
vol 20
wang 2
ward 1
warner 3
was 5
water 2
we 1
weighted 1
were 6
when 2
which 5
while 1
whose 1
wi 1
will 1
with 24
within 1
wool 1